REMARKS

Applicant has carefully reviewed the Examiner's objections, rejections, and comments as found in the Office Action dated December 13, 2005 and provides the following remarks regarding the Office Action. Claims 1-13 are pending in this application.

Claim Rejection – 35 USC §132(a)

The Examiner objected to the amendment filed November 3, 2005 under 35 U.S.C. § 132(a) because it introduces new matter into the disclosure. This objection is respectfully traversed. The Applicant has amended this disclosure to clarify the definitions of "x," "y," and "z." This clarification is not new matter, as these are the integers and disclosure related to the exemplary epoxy functional silicone SILRES® HP 1000 from Wacker Chemicals Corp., supported and described in the specification in the originally filed application. (See Page 4, Lns. 18 – 21) Further, attached is a technical data sheet for the exemplary epoxy functional silicone SILRES® HP 1000 from Wacker Chemicals, which is published on their website. In the fifth paragraph, the technical data sheet states, "SILRES® 1000 has a weight per epoxy between 330 – 350 grams of polymer per moles of epoxy... ." This weight of polymer per moles of epoxy supports the ranges described in the specification and claimed in Claim 3. This amendment includes matter that is supported inherently by the originally filed specification and as interpreted by one of ordinary skill in the art does not constitute new matter. One skilled in the art would easily be able to determine the values of "x," "y," and "z" from this published technical data sheet in light of the present application. Attached is a copy of the noted technical data sheet for the SILRES® 1000 silicone resin.

In addition, the values for "x," "y," and "z" have been amended to 1 – 20, instead of 1 – 100 to clarify the values in light of the technical data sheet related to the SILRES® 1000 silicone resin. For example, where the value of "x" equals 4, "y" equals 4, and "z" equals 2, the weight of the polymer per mole of epoxy is approximately 343 grams per mole of epoxy. In another example, where the values of "x" equals 5, "y" equals 5, and "z" equals 3, the weight of the polymer per mole of epoxy is approximately 346 grams per mole of epoxy. In yet another example, where the values of "x" equals 20, "y" equals 20, and "z" equals 20, the weight of the polymer per mole of epoxy is approximately 334 grams per mole of epoxy. Using the chemical structure provided in Claim 3 with the range of 330 – 350 grams of polymer per moles of epoxy as provided in the technical data sheet of the SILRES® 1000 silicone resin, one skilled in the art could easily determine the ranges of these and any other

combinations of values that would provide a weight of polymer per epoxy value. Thus, the amended values for "x," "y," and "z" in amended Claim 3 can be from 1 to 20 and are supported by the present specification. Therefore, it is believed that this objection and the objection found in paragraph 3 of the Office Action are overcome.

Claim Rejection – 35 USC §112, First Paragraph

The Examiner rejected to Claim 3 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. This rejection is respectfully traversed. As stated above and for the same reasons, these values of "x," "y," and "z" are not new matter. Furthermore, the present specification notes the chemical structure for the exemplary epoxy functional silicone SILRES® HP 1000 from Wacker Chemicals Corp. (Pg. 4, Line 10) Therefore, it is believed that this rejection is overcome.

Claim Rejection – 35 USC §112, First Paragraph

The Examiner rejected Claims 4 to 9 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. This rejection is respectfully traversed. The previous ranges for these claims were clear; nonetheless, in response to the Examiner's previous rejections, the Applicant has converted the ranges previously found in Claims 4 to 9 so that they are based on 100 parts by weight of the total polyol prepolymer chain extender. For example, in Claims 4 and 5, the lower amount of the at least one amine was 50 parts by weight and the upper amount of the at least one epoxy functional silicone was 200 parts by weight, thus, to convert these values so that they are based on 100 parts by weight of the total polyol prepolymer chain extender the following conversion was done. Since the total amount of the total polyol prepolymer chain extender would be 250 parts by weight (the 50 parts by weight of the amine added to the 200 parts by weight of the epoxy functional silicone), thus the lower amount of the at least one amine is 20 parts by weight based on 100 parts by weight of the total polyol prepolymer chain extender (50 parts by weight of the at least one amine divided by 250 parts by total weight of the epoxy functional silicone). The upper amount of the at least one epoxy functional silicone of Claim 5 is the difference between the lower amount of the at least one amine, 20 parts by weight, and the total 100 parts by weight of the total polyol prepolymer chain extender is 80 parts by weight. The same conversion process was performed on the remaining amount in the ranges as found in Claims 4 to 9. In addition to the support for these ranges found in the claims,

the specification contains several additional examples for the polyol prepolymer chain extender. (Exs. 1 - 7) Therefore, it is believed that this rejection is overcome.

Claim Rejection - 35 USC §112, Second Paragraph

The Examiner rejected Claims 8 and 9 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as their invention. Applicant has amended Claim 8 to delete the polyaspartic ester in combination with the polyoxypropylenediamine; Applicant has also added new Claim 25 to include the limitation that the prepolymer chain extender includes a polyaspartic ester. In new Claim 25, the Applicant has also clarified that the lower limit of the polyaspartic ester is 20 parts by weight based on 100 parts by weight of the total polyol prepolymer chain extender. Therefore, it is believed that this rejection is overcome.

Claim Rejection - 35 USC §103(a)

The Examiner rejected Claims 1, 2, 4, 5, 18, and 19 under 35 U.S.C. §103(a) as being unpatentable over WO 02/10255, as interpreted by Herzig et al. This rejection is respectfully traversed. Applicant respectfully submits that the WO 02/10255, as interpreted by Herzig et al. neither forms the basis of nor establishes a *prima facie* case of obviousness. For a *prima facie* case of obviousness to be established, the Examiner must show that one or more references that were available to the inventor meet three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (MPEP 2142)

The Herzig et al. reference does not meet all three criteria. First, the Herzig et al. reference does not teach every element of the claimed invention. As argued previously, the Herzig et al. reference discloses a reaction product between a *linear* epoxy-containing organosilicon compound and a polyamine that are non-crosslinked and that are only linear silicon containing molecules, as opposed to branched silicon containing molecules as disclosed in the present application. (See col. 2, ln. 52 - col. 3, ln. 2; col. 3, lns. 21 - 38) Additionally, the Herzig et al. reference discloses alpha-omega organosilicon compounds, which are *linear* silicon containing compounds and not *branched* silicon containing compounds. (See col. 8, lns. 63 - 67; col. 14, lns. 25 - 29, 43 - 47; col. 15, lns. 63 - 67) The reaction

products have linear silicon containing molecules, which are contrary to the branched silicon containing molecules as disclosed in the present application and as found in the amended independent Claims 1 and 18.

Moreover, the Examiner is mischaracterizing the Herzig et al. reference. Specifically, if equimolar portions of an amine, such as Jeffamine 200, were mixed and heated with equimolar portion of a branched epoxy functional silicone, such as HP 1000®, a gel and not the desired liquid would be produced. Also, if an aromatic diamine material is mixed and heated with equimolar portions of a branched epoxy functional silicone, such as HP 1000®, a gel and not the desired liquid would be produced. Furthermore, the Herzig et al. reference uses a solvent based reaction to avoid creating a gel (Col. 8, Ln. 65 – Col. 9, Ln. 9). The Herzig et al. reference teaches stopping the reaction before it becomes a gel and then protonating the intermediate to create a stable alpha omega material, not a branched system as described and claimed in the present application. If the Herzig et al. reference were to use a branched system, a stable compound would not be produced, because a linear amine, like a diamine, mixed with a branched epoxy functional silicone, such as HP 1000®, produces a dimerized or trimerized reaction, thus the number of centers becomes almost exponentially large to produce an undesirable gel. To avoid producing such a gel, the Herzig et al. reference only works with alpha omega diamines and alpha omega epoxy functional silicones; such materials will not gel and can become very high in molecular weight with a desired viscosity of a liquid. Therefore, to control the molecular weight of the Herzig et al. reference material, a monofunctional amine, such as n-octylamine, is used, which by its use would not provide a cross link of the present application. Also, the Herzig et al. reference dissolves the polymer in materials such as diethylene glycol and dibutyl ether, followed by protonating the intermediate with acetic acid. The present application does not involve any of these steps to create a liquid polyurea having a desired viscosity.

Further, contrary to the Examiner's beliefs, if a branched silicone molecule was cold blended with an amine, such as Jeffamine 200, the two materials would phase separate, because a silicone does not want to incorporate into a polymer. This is because two or more polymers are generally incompatible when mixed together. For example, when mixing most silicones, polyurethanes, and polyureas together a phase separated mixture is produced. Additionally, if these two components were then mixed with a B-component isocyanate, they all would phase separate out when a user went to use them. It is well known that by mixing epoxy groups with amines produces amino alcohols, thus the

Herzig et al. reference does not obviate this problem. By simply combining what is taught by the Herzig et al. reference the desired material as disclosed and claimed in the present application would not be achieved.

Conversely, as found in the original specification, examples, and amended Claim 1 and original Claims 18, the present application includes a molar excess of at least one amine relative to the branched epoxy functional silicone. The present application solves the limitations found in the Herzig et al. reference by controlling the viscosity by using polymeric amines, such as diamines, and aliphatic amines, such as diamines, in combination with a trifunctional silicone, which would otherwise be problematic but for the amine being in a molar excess to the epoxy functional silicone. By using a molar excess of amines in combinations with an epoxy functional silicone, the present application is able to produce desirable prepolymers, which then can react with an isocyanate to produce a modified polyurea not achievable by that disclosed in the Herzig et al. reference.

Therefore, as argued above, the Herzig et al. reference teaches away from the present invention that uses at least one amine in a molar excess relative to the at least one branched epoxy functional silicone. To clarify this distinction, the Applicant has amended Claim 1 to include this limitation. This claim limitation is neither taught nor even hinted at in the Herzig et al. reference.

Moreover, in light of the above arguments, there is not a reasonable expectation of success that the Herzig et al. reference would produce a stable liquid polyol prepolymer as disclosed and claimed in the present application. For the reasons stated above with respect to the Herzig et al. reference, Applicant respectfully submits that it does not form the basis of a *prima facie* case of obviousness of Claims 1 and 18. Therefore, it is believed that Claims 1 and 18 are allowable under 35 U.S.C. §103(a). Claims 2, 4, and 5 and Claim 19 depend from and include all the limitations of amended Claims 1 and 18, respectively, and thus they are also believed to be allowable under 35 U.S.C. §103(a).

Claim Rejection - 35 USC §102(b)

The Examiner rejected Claims 1, 4, and 5 under 35 U.S.C. §102(b) as being anticipated by Raleigh et al. This rejection is respectfully traversed. Applicant respectfully submits that the Raleigh et al. reference neither forms the basis of nor establishes a *prima facie* case of anticipation. For a *prima facie* case of anticipation to be established, the Examiner must show that, each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. MPEP §2131

As discussed above, the Applicant has amended independent Claim 1 to clarify that the present application includes a molar excess of at least one amine relative to the branched epoxy functional silicone. The Raleigh et al. reference describes many known silicone polymers and reacts them with possibly polycarbonates. In addition, the Raleigh et al. reference claims thermoplastics, but the present invention does not disclose nor claim thermoplastic type materials.

For the reasons stated above with respect to both the Herzig et al. reference and the Raleigh et al. reference in light of amended independent Claim 1, Applicant respectfully submits that the Raleigh et al. reference does not form the basis of a *prima facie* case of anticipation of independent Claim 1. Therefore, it is believed that Claim 1 is allowable under 35 U.S.C. §102(b). Claims 4 and 5 depend from and include all the limitations of amended Claim 1, thus they are also believed to be allowable under 35 U.S.C. §102(b).

Claim Rejection - 35 USC §103(a)

The Examiner rejected Claims 2, 18, and 19 under 35 U.S.C. §103(a) as being unpatentable over Raleigh et al. This rejection is respectfully traversed. As discussed above, independent Claim 1 has been amended to further clarify the present invention. The Raleigh et al. reference does not teach the invention as found in the present amended Claim 1 and original Claim 18, that both include the limitation that the at least one amine is present in a molar excess relative to at least one epoxy functional silicones. Thus there exists no reasonable expectation of success of the Raleigh et al. reference to provide a polyol prepolymer chain extender for a silicone modified polyurea of the present invention. Additionally, the Raleigh et al. reference does not teach or suggest all the claim limitations of the present application. Therefore, the Applicant respectfully submits that in light of the arguments set forth above the Raleigh et al. reference neither forms the basis of nor establishes a *prima facie* case of obviousness.

In view of the above amendments and remarks, Applicant believes the pending application is in condition for allowance. Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-2816, under Order No. 009608.0113PTUS from which the undersigned is authorized to draw.

Respectfully submitted,
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